

What we claim is:

1. A data reader arranged to read a data-holding medium containing data
5 comprising both user and non-user data, set data being held in at least one set,
and each said set being arranged into datasets, said non-user data holding
information relating to said user data and being interspersed therewith, said data
reader comprising at least one read head arranged to read said data-holding
10 medium and generate a data signal comprising user data and non-user data, said
non-user data being arranged to identify said user data within said sets,
processing circuitry being arranged to receive and process said data signal and
obtain said user data from said data signal using said non-user data to identify
said user data within said data signal.
- 15 2. A data reader according to claim 1 wherein the processing circuitry is
arranged to occupy a state reflecting whether said data being read from the data-
holding medium is in an overlap zone in which sets of data can originate from a
plurality of datasets.
- 20 3. A data reader according to claim 2 wherein said processing circuitry
comprises a timer arranged to time from the end of the last set of user data within
a dataset, and said processing circuitry is arranged to enter said state reflecting
that data being read from a said data-holding medium is in an overlap zone until
said timer reaches a predetermined value.
- 25 4. A data-reader according to claim 3 wherein said processing circuitry is
arranged to monitor said data signal and reset said timer should said data signal
comprise a re-write of substantially the same set of user data from a dataset
before said timer reaches said predetermined value.

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5. A data reader according to claim 1 wherein said processing circuitry is arranged to monitor said data signal and further arranged to determine whether a set of user data has been written to a said data-holding medium a plurality of times by monitoring said non-user data within said data signal.

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6. A data reader according to claim 5 wherein said processing circuitry is arranged to reject an earlier received set of user data in favour of a later substantially identical set of user data if said processing circuitry determines that said set of user data has been written to said data-holding medium a plurality of times.

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7. A data reader according to claim 5 wherein said processing circuitry is arranged to combine an earlier received set of user data with a later received substantially identical set of user data if said processing circuitry determines that said user data has been written to said data-holding medium a plurality of times.

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8. A data reader according to claim 1 wherein said processing circuitry comprises a timer arranged to time from the end of the last set of user data within a dataset and is arranged to occupy a state reflecting that said user data being read from said data-holding medium is in an exclusive zone, indicating that said user data should only occur from a single dataset, once said timer has reached a predetermined value.

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9. A data reader according to claim 1 wherein said processing circuitry is arranged to monitor said non-user data to determine whether neighbouring sets of user data being read from a said data-holding medium were written in the same write pass.

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10. A data reader according to claim 2 wherein said processing circuitry is arranged to monitor said non-user data and identify the identity of said sets of

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data being read from a said data-holding medium, and further arranged to determine if more than two datasets have occurred within an overlap zone.

11. A data reader according to claim 10 wherein said processing circuitry is
5 arranged to reject sets of data that occur from greater than a second dataset within said overlap zone.

12. A data reader according to claim 10 wherein said processing circuitry is
10 arranged to reject earlier received sets of data once sets of user data are received from a said data-holding medium from greater than a second dataset within said overlap zone.

13. A data reader according to claim 1 wherein said processing circuitry is
15 arranged to occupy a state reflecting that data being read from a said data-holding medium is in an overwrite zone in which a first dataset being read therefrom can be overwritten by a second dataset, before the end of said first dataset is reached.

14. A data reader according to claim 13 in which said processing circuitry is
20 arranged to occupy a state reflecting that data being read from a said data-holding medium is beyond said overwrite zone.

15. A data reader according to claim 1 in which a zone detector is provided to
interpret said non-user data and determine whether said user data is from the
25 same dataset.

16. A data reader according to claim 1 in which said processing circuitry is
arranged to occupy a state reflecting the status of sets of data being read from a
said data-holding medium and said processing circuitry comprises a zone detector
to interpret said non-user data and determine whether said user data is from the
30 same dataset, and in which said zone detector is arranged so that it controls the state occupied by said processing circuitry.

17. A data storage device incorporating a data reader according to claim 1.

18. A method of reading data from a data-holding medium containing user
5 data held in a plurality of sets and interspersed with non-user data, said non-user
data-holding information relating to said user data, the method comprising
reading said non-user data to identify said user data within said sets and obtain
said user data from said data-holding medium said method further comprising
10 arranging said sets of user data into datasets, the identity of which are provided by
the non-user data, and monitoring the non-user data to ascertain the identity of the
dataset being read from the data-holding medium.

19. A method according to claim 18 which comprises using the non-user data
to determine whether data being read from the data-holding medium is in an
15 overlap zone in which sets of data can originate from a plurality of datasets.

20. A method according to claim 18 which comprises using the non-user data
to determine when the end of a dataset has occurred further comprising timing
from the end of the last set of user data within a dataset to ensure that no re-
20 writes of the last or any other set of user data from that dataset are present on the
data-holding medium.

21. A method according to claim 20 which comprises using the non-user data
to determine if any of the sets of data from a dataset have been re-written and
25 restarting the timing if any re-writes are detected once the last set of user data
within a dataset has been read.

22. A method according to claim 18 which comprises using the non-user data
to determine if any of the sets of data from a dataset have been written a plurality
30 of times to the data-holding medium during writing of the data to the data-holding
medium.

23. A method according to claim 22 comprising rejecting an earlier set of data from a dataset, read from the data-holding medium, in favour of a later received substantially identical set of data from a dataset once it is detected that a set of data has been written a plurality of times to the data-holding medium.
24. A method according to claim 22 comprising combining an earlier set of data from a dataset, read from the data-holding medium, with at least one later received substantially identical set of data from a dataset once it is detected that a set of data has been written a plurality of times to the data-holding medium.
25. A method according to claim 21 comprising asserting that data being read from the data-holding medium is in an exclusive zone, such that data should only occur from a single dataset, once the timing has reached a predetermined value.
26. A method according to claim 19 comprising using a state machine to monitor whether the data being read from the data-holding medium is an overlap zone.
27. A method according to claim 18 which comprises detecting whether data being read from the data-holding medium is in an overwrite zone in which a first dataset being read therefrom can be overwritten by a second dataset, before the end of said first dataset is reached.
28. A method according to claim 27 comprising using a state machine to monitor whether the data being read from the data-holding medium is in an overwrite zone.
29. A method according to claim 18 comprising monitoring the non-user data to determine whether sets of data being read from the data-holding medium were written in the same pass.

30. A method according to claim 29 comprising monitoring a portion of the non-user data that provides a numerical value representing the pass on which the set of data being read was written, further comprising detecting whether the numerical value is altered for neighbouring sets of data.

31. A method according to claim 19 comprising monitoring the identity of the datasets being read from the data-holding medium and determining if more than two datasets have occurred within the overlap zone.

32. A method according to claim 31 comprising rejecting sets of data read from the data-holding medium that occur from a third or higher dataset that occurs within the overlap zone.

33. A method according to claim 31 comprising rejecting sets of data from earlier datasets read from the data-holding medium within the overlap zone if more than two datasets occur within the overlap zone.

34. A computer readable medium having stored therein instructions for causing a processing unit to execute the method of claim 18.

35. A data reader arranged to read a data-holding medium containing first and second markers in addition to user data, said data reader comprising at least one read head arranged to read said data-holding medium and generate a data signal corresponding to said first and second markers, and said user data, the data reader further comprising processing circuitry arranged to receive said data signal and obtain said user data from said data-holding medium wherein, said processing circuitry is arranged to identify said user data without reference to said first marker.